

## What is claimed is:

1. A stage assembly that moves a device, the stage assembly comprising:

a device table that retains the device:

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a stage mover assembly connected to the device table, the stage mover assembly moves the device table;

a measurement system for monitoring the position the device table, the measurement system including a first X mirror and a second X mirror that are secured to the device table;

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a first fiducial mark and a second fiducial mark that are secured to the device table, the fiducial marks being used to determine the position of the first X mirror relative to the second X mirror.

2. The stage assembly of claim 1 wherein the measurement system includes a first X block that interacts with the first X mirror to monitor the position of the device table.

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3. The stage assembly of claim 2 wherein the first X block interacts with the first X mirror to monitor the position of the device table when the device table is in an alignment position.

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4. The stage assembly of claim 3 wherein the measurement system includes a second X block that interacts with the second X mirror to monitor the position of the device table.

5. The stage assembly of claim 4 wherein the second X block interacts with the second X mirror to monitor the position of the device table when the device table is in an operational position.

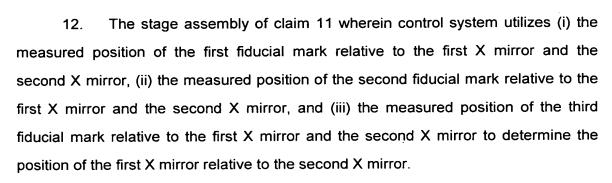
- 6. The stage assembly of claim 1 further comprising a control system that utilizes the first fiducial mark and the second fiducial mark to determine the position of the first X mirror relative to the second X mirror.
- 7. The stage assembly of claim 6 wherein the measurement system measures (i) the position of the first fiducial mark relative to the first X mirror and the second X mirror, and (ii) the position of the second fiducial mark relative to the first X mirror and the second X mirror.

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- 8. The stage assembly of claim 7 wherein control system utilizes the measured position of the first fiducial mark relative to the first X mirror and the second X mirror, and the measured position of the second fiducial mark relative to the first X mirror and the second X mirror to determine the position of the first X mirror relative to the second X mirror.
- 9. The stage assembly of claim 1 including a third fiducial mark secured to the device table, the third fiducial mark also being used to determine the position of the first X mirror relative to the second X mirror.
- 10. The stage assembly of claim 9 further comprising a control system that utilizes the first fiducial mark, the second fiducial mark and the third fiducial mark to determine the position of the first X mirror relative to the second X mirror.
- 11. The stage assembly of claim 10 wherein the measurement system
  20 measures (i) the position of the first fiducial mark relative to the first X mirror and the
  second X mirror, (ii) the position of the second fiducial mark relative to the first X
  mirror and the second X mirror, and (iii) the position of the third fiducial mark relative
  to the first X mirror and the second X mirror.



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- 13. An exposure apparatus including the stage assembly of claim 1.
- 14. A device manufactured with the exposure apparatus according to claim 13.
- 15. A wafer on which an image has been formed by the exposure apparatus of claim 13.
- 16. A method for determining the relative positions of a first X mirror and a second X mirror that are secured to a device table, the method comprising the steps of:

securing a first fiducial mark and a second fiducial mark to the device table; and

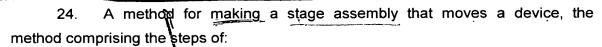
determining the position of the first X mirror relative to the second X mirror using the first fiducial mark and the second fiducial mark.

- 17. The method of claim 16 including the step of providing a first X block
  20 that interacts with the first X mirror to monitor the position of the device table in an alignment position.
  - 18. The method of claim 17 including the step of providing a second X block that interacts with the second X mirror to monitor the position of the device table in an operational position.

- 19. The method of claim 16 wherein the step of determining the position includes the step of measuring (i) the position of the first fiducial mark relative to the first X mirror and the second X mirror, and (ii) the position of the second fiducial mark relative to the first X mirror and the second X mirror.
- 20. The method of claim 19 wherein the step of determining the position of the first X mirror relative to the second X mirror includes utilizing the measured position of the first fiducial mark relative to the first X mirror and the second X mirror, and the measured position of the second fiducial mark relative to the first X mirror and the second X mirror to determine the relative position of X mirrors.
- 21. The method of claim 16 including the step of securing a third fiducial mark to the device table, the third fiducial mark also being used to determine the position of the first X mirror relative to the second X mirror.
- 22. The method of claim 21 wherein the step of determining the position includes the step of measuring (i) the position of the first fiducial mark relative to the first X mirror and the second X mirror, (ii) the position of the second fiducial mark relative to the first X mirror and the second X mirror, and (iii) the position of the third fiducial mark relative to the first X mirror and the second X mirror.
- 23. The method of claim 22 wherein the step of determining the position of the first X mirror relative to the second X mirror includes utilizing the measured position of the first fiducial mark relative to the first X mirror and the second X mirror, the measured position of the second fiducial mark relative to the first X mirror and the second X mirror, and the measured position of the third fiducial mark relative to the first X mirror and the second X mirror to determine the relative position of the X mirrors.

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retaining the device with a device table;

connecting a stage mover assembly to the device table, the stage mover assembly moving the device table;

monitoring the position the device table with a measurement system, the measurement system including a first X mirror, a second X mirror, and a Y mirror that are secured to the device table;

securing a first figurial mark and a second fiducial mark to the device table: and

determining the position of the first X mirror relative to the second X mirror using the first fiducial mark and the second fiducial mark.

- The method of claim 24 wherein the step of determining the position 25. includes the step of measuring (i) the position of the first fiducial mark relative to the first X mirror, the second X mirror, and the Y mirror, and (ii) the position of the second fiducial mark relative to the first X mirror, the second X mirror, and the Y mirror.
- The method of claim 25 wherein the step of determining the position of 26. the first X mirror relative to the second X mirror includes utilizing the measured position of the first fiducial mark relative to the first X mirror, the second X mirror, and the Y mirror, and the measured position of the second fiducial mark relative to the first X mirror, the second X mirror, and the Y mirror
- The method of claim 24 including the step of securing a third fiducial 27. mark to the device table, the third fiducial mark also being used to determine the position of the first X mirror relative to the second X mirror.

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- 28. The method of claim 27 wherein the step of determining the position includes the step of measuring (i) the position of the first fiducial mark relative to the first X mirror, the second X mirror, and the Y mirror, (ii) the position of the second fiducial mark relative to the first X mirror, the second X mirror, and the Y mirror, and (iii) the position of the third fiducial mark relative to the first X mirror, the second X mirror, and the Y mirror.
- 29. The method of claim 28 wherein the step of determining the position of the first X mirror relative to the second X mirror includes utilizing the measured position of the first fiducial mark relative to the first X mirror, the second X mirror, and the Y mirror, the measured position of the second fiducial mark relative to the first X mirror, the second X mirror, and the Y mirror, and the measured position of the third fiducial mark relative to the first X mirror, the second X mirror, and the Y mirror.
- 4 30. A method for making an exposure apparatus that forms an image on a wafer, the method comprising the steps of:

providing an irradiation apparatus that irradiates the wafer with radiation to form the image on the wafer; and

providing the stage assembly made by the method of claim 24.

31. A method of making a wafer utilizing the exposure apparatus made by the method of claim 30.

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32. A method of making a device including at least the exposure process: wherein the exposure process utilizes the exposure apparatus made by the method of claim 30.